

=> FILE REG
FILE 'REGISTRY' ENTERED ON 26 OCT 2007
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=> D HIS

FILE 'REGISTRY'

L1 E TERT-AMYLBENZENE/CN
1 S E3
· E DI-TERT-AMYLBENZENE/CN
E TRI-TERT-AMYLBENZENE/CN
E BENZENE, DI-TERT-AMYL-/CN
E BENZENE, TRI-TERT-AMYL-/CN
E VINYLENE CARBONATE/CN
L2 1 S E3

FILE 'HCA'

L3 244601 S (BATTERY OR BATTERIES OR (ELECTROCHEM? OR ELECTROLY? OR
L4 491465 S ELECTROLY?
L5 426 S L1 OR (T OR TERT?) (2A) ((AMYL#(A)BENZENE#) OR AMYLBENZEN
L6 1445 S L2 OR VINYLENECARBONATE# OR VINYLENE# (2A) CARBONATE#
L7 24 S (L3 OR L4) AND L5
L8 801 S (L3 OR L4) AND L6
L9 13 S L7 AND L8

FILE 'LREGISTRY'

L10 STR

FILE 'REGISTRY'

L11 181082 S (C (L) H)/ELS (L) 2/ELC.SUB
L12 50 S L10 SSS SAM SUB=L11
L13 8347 S L10 SSS FUL SUB=L11
 SAV L13 WIL756/A

FILE 'HCA'

L14 10036 S L13
L15 161 S (L3 OR L4) AND L14
L16 19 S L15 AND L5
L17 53 S L15 AND L6
L18 12 S L16 AND L17

FILE 'REGISTRY'

L19 STR

L20 STR
L21 50 S L19 NOT L20 SSS SAM SUB=L13
L22 3685 S L19 NOT L20 SSS FUL SUB=L13
SAV L22 WIL756A/A

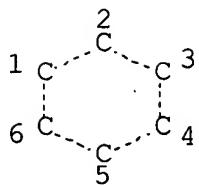
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L23 7010 S L22
L24 145 S (L3 OR L4) AND L23
L25 19 S L24 AND L5
L26 53 S L24 AND L6
L27 12 S L25 AND L26

FILE 'REGISTRY'
E C16H26/MF
L28 725 S E3
L29 183 S L28 AND 46.150.18/RID
L31 628196 S ?DIMETHYLPROPYL?/CNS OR ?AMYL?/CNS
L32 10 S L29 AND L31
SEL L32 2,5,6,7 RN
L33 4 S E1-E4
E C21H36/MF
L34 229 S E3
L35 63 S L34 AND 46.150.18/RID
L36 7 S L35 AND L31
SEL L36 4 RN
L37 1 S E1

FILE 'HCA'
L38 19 S L33 OR L37
L39 0 S (L3 OR L4) AND L38
L40 24 S L7 OR L9 OR L16 OR L18 OR L25 OR L27
L41 8 S 1840-2002/PY,PRY AND L40
L42 16 S L40 NOT L41
SAV L42 WIL756B/A
L43 24 S (L3 OR L4) AND (L5 OR L38)
L44 53 S (L3 OR L4) AND L6 AND L23
L45 16 S L43 NOT L41
L46 41 S L44 NOT (L41 OR L45)
L47 0 S 1840-2002/PY,PRY AND L45
L48 14 S 1840-2002/PY,PRY AND L46

FILE 'REGISTRY'

=> D L22 QUE STAT
L10 STR



Cb 9

NODE ATTRIBUTES:

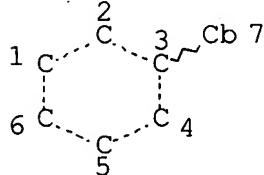
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 GGCAT IS SAT AT 9
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

L11 181082 SEA FILE=REGISTRY (C (L) H)/ELS (L) 2/ELC.SUB
 L13 8347 SEA FILE=REGISTRY SUB=L11 SSS FUL L10
 L19 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
 GGCAT IS SAT AT 7
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I
 NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

L20 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE

L22 3685 SEA FILE=REGISTRY SUB=L13 SSS FUL L19 NOT L20

100.0% PROCESSED 7773 ITERATIONS
SEARCH TIME: 00.00.01

3685 ANSWERS

=> FILE HCA

FILE 'HCA' ENTERED ON 26 OCT 2007

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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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=> D L41 1-8 BIB ABS HITSTR HITIND

L41 ANSWER 1 OF 8 HCA COPYRIGHT 2007 ACS on STN

AN 140:324236 HCA Full-text

TI Nonaqueous **electrolyte** secondary **battery**

IN Iwanaga, Masato; Fujiwara, Kazuyasu; Ohshita, Ryuji; Terasaka, Masayuki; Takahashi, Masatoshi

PA Sanyo Electric Co., Ltd., Japan

SO U.S. Pat. Appl. Publ., 13 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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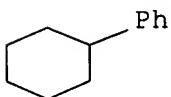
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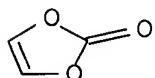
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JP 2004127543	A	20040422	JP 2002-286059
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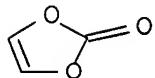
TW 239672	B	20050911	TW 2003-92122820	200209 30
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CN 1489235	A	20040414	CN 2003-156730	<-- 200309 08
KR 2004028558	A	20040403	KR 2003-67263	<-- 200309 29
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PRAI JP 2002-286059	A	20020930	<--	
AB	The present invention provides a nonaq. electrolyte secondary cell that has good high-temp. cycle characteristics and good high-temp. standing resistance, and that is highly safe enough to prevent overcharge. The nonaq. electrolyte secondary cell of the invention utilizes a nonaq. electrolyte that includes a vinylene carbonate deriv., a cyclic sulfite deriv., and both/either of a phenylcycloalkane deriv. and/or an alkylbenzene deriv. having a quaternary carbon directly bonded to a benzene ring.			
IT	827-52-1, Phenylcyclohexane 872-36-6, Vinylene carbonate 872-36-6D, Vinylene carbonate , deriv. 2049-95-8, tert-Amylbenzene (nonaq. electrolyte secondary battery)			
RN	827-52-1 HCA			
CN	Benzene, cyclohexyl- (CA INDEX NAME)			



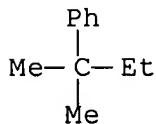
RN 872-36-6 HCA
 CN 1,3-Dioxol-2-one (CA INDEX NAME)



RN 872-36-6 HCA
CN 1,3-Dioxol-2-one (CA INDEX NAME)



RN 2049-95-8 HCA
CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



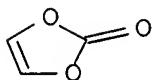
IC ICM H01M010-40
 ICS H01M004-52
INCL 429330000; 429231300; 429340000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery** nonaq **electrolyte** secondary
IT Secondary **batteries**
 (lithium; nonaq. **electrolyte** secondary **battery**
)
IT **Battery electrolytes**
 (nonaq. **electrolyte** secondary **battery**)
IT Cycloalkanes
 (nonaq. **electrolyte** secondary **battery**)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate
 7782-42-5, Graphite, uses 12190-79-3, Cobalt lithium oxide colio2
 21324-40-3, Lithium hexafluorophosphate
 (nonaq. **electrolyte** secondary **battery**)
IT 827-52-1, Phenylcyclohexane 872-36-6,
 Vinylene carbonate 872-36-6D,
 Vinylene carbonate, deriv. 2049-95-8,
 tert-Amylbenzene 3741-38-6, Ethylene sulfite
 (nonaq. **electrolyte** secondary **battery**)
L41 ANSWER 2 OF 8 HCA COPYRIGHT 2007 ACS on STN
AN 140:202414 HCA Full-text
TI Secondary lithium **battery**, nonaqueous **electrolyte**

, and method for ensuring **battery** safety
IN Abe, Hiroshi; Miyoshi, Kazuhiro; Kuwata, Takaaki; Matsumori, Yasuo
PA Ube Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

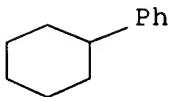
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004063367	A	20040226	JP 2002-222509	20020731

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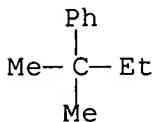
PRAI JP 2002-222509 20020731 <--
AB The **battery** uses a Ni or Co contg. Li multiple oxide, a Li (alloy) or Li intercalating anode, and a nonaq. **electrolyte** soln.; where the **electrolyte** soln. contains an org. compd. which decomp. to deposit a coating layer on the active Li surface, during overcharge of the **battery**, to ensure the **battery** safety. Preferably, the compd. has an redox. potential 4.6.apprx.5.2 V vs. Li, and is a ketone selected from menthone, isomenthone, camphor, nopinone, and fenchone and may be mixed with a cyclohexylbenzene deriv. The **electrolyte** soln. contains the compd.
IT 872-36-6, **Vinylene carbonate**
(**electrolyte** solns. contg. org. compd. additives for secondary lithium **battery** safety)
RN 872-36-6 HCA
CN 1,3-Dioxol-2-one (CA INDEX NAME)



IT 827-52-1, Cyclohexylbenzene 2049-95-8,
tert-Pentylbenzene
(org. compd. additives in **electrolyte** solns. for secondary lithium **battery** safety)
RN 827-52-1 HCA
CN Benzene, cyclohexyl- (CA INDEX NAME)



RN 2049-95-8 HCA
CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



IC ICM H01M010-40
ICS H01M004-02; H01M004-40; H01M004-58
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary lithium **battery electrolyte** safety
additive ketone cyclohexylbenzene
IT **Battery electrolytes**
Safety
(**electrolyte** solns. contg. org. compd. additives for
secondary lithium **battery** safety)
IT Secondary **batteries**
(lithium; **electrolyte** solns. contg. org. compd.
additives for secondary lithium **battery** safety)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate
872-36-6, Vinylene carbonate
21324-40-3, Lithium hexafluorophosphate
(**electrolyte** solns. contg. org. compd. additives for
secondary lithium **battery** safety)
IT 76-22-2, Camphor 89-80-5, Menthone 98-06-6, tert-Butylbenzene
491-07-6, Isomenthone **827-52-1**, Cyclohexylbenzene
1717-84-6 **2049-95-8**, tert-Pentylbenzene 4695-62-9,
(+)-Fenchone 24903-95-5, Nopinone 444603-90-1
(org. compd. additives in **electrolyte** solns. for
secondary lithium **battery** safety)
L41 ANSWER 3 OF 8 HCA COPYRIGHT 2007 ACS on STN
AN 140:44762 HCA Full-text
TI Secondary nonaqueous **electrolyte battery**
IN Fujiwara, Kazuyasu; Takahashi, Masatoshi; Iwanaga, Masato
PA Sanyo Electric Co., Ltd., Japan

SO PCT Int. Appl., 30 pp.

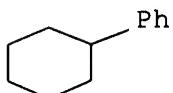
CODEN: PIXXD2

DT Patent

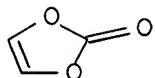
LA Japanese

FAN.CNT 1

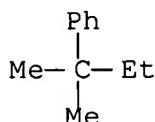
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004001889	A1	20031231	WO 2003-JP7944	200306 23
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	W: CN, KR, US JP 2004030991	A	20040129	JP 2002-182128	200206 21
	CN 1663071	A	20050831	CN 2003-814595	200306 23
				<--	
	US 2006166102	A1	20060727	US 2004-509756	200409 30
				<--	
PRAI	JP 2002-182128	A	20020621	<--	
	WO 2003-JP7944	W	20030623		
AB	The battery has a Li-intercalating cathode, a Li-intercalating anode, and an nonaq. electrolyte soln. contg. a nonaq. solvent mixt. and an electrolyte salt; where the solvent mixt. contains a cycloalkyl benzene deriv. and an alkylbenzene deriv. having a quaternary carbon atom bonded directly to the benzene ring and not having any cycloalkyl groups bonded directly to the benzene ring.				
IT	827-52-1, Cyclohexyl benzene 872-36-6, Vinylene carbonate 2049-95-8, tert-Amyl benzene				
	(nonaq. solvent mixts. contg. cycloalkyl benzene derivs. and alkylbenzene derivs. for secondary battery electrolytes)				
RN	827-52-1 HCA				
CN	Benzene, cyclohexyl- (CA INDEX NAME)				



RN 872-36-6 HCA
CN 1,3-Dioxol-2-one (CA INDEX NAME)



RN 2049-95-8 HCA
CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary **battery electrolyte** solvent cycloalkyl
benzene alkylbenzene deriv
IT **Battery electrolytes**
(nonaq. solvent mixts. contg. cycloalkyl benzene derivs. and
alkylbenzene derivs. for secondary **battery**
electrolytes)
IT 7782-42-5, Graphite, uses
(anode; nonaq. solvent mixts. contg. cycloalkyl benzene derivs.
and alkylbenzene derivs. for secondary **battery**
electrolytes)
IT 21324-40-3, Lithium hexafluorophosphate
(**electrolyte** salt; nonaq. solvent mixts. contg.
cycloalkyl benzene derivs. and alkylbenzene derivs. for secondary
battery electrolytes)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate
12190-79-3, Cobalt lithium oxide (CoLiO₂)
(nonaq. solvent mixts. contg. cycloalkyl benzene derivs. and
alkylbenzene derivs. for secondary **battery**
electrolytes)
IT 827-52-1, Cyclohexyl benzene 872-36-6,
Vinylene carbonate 2049-95-8,
tert-Amyl benzene
(nonaq. solvent mixts. contg. cycloalkyl benzene derivs. and

alkylbenzene deriys. for secondary **battery**
electrolytes)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 4 OF 8 HCA COPYRIGHT 2007 ACS on STN

AN 137:143036 HCA Full-text

TI Nonaqueous **electrolyte** solution and secondary lithium
battery

IN Abe, Koji; Matsumori, Yasuo; Ueki, Akira

PA Ube Industries, Ltd., Japan

SO PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2002059999 A1 20020801 WO 2002-JP518
200201
24

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CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE,
CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT,
SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
SN, TD, TG

JP 2002298909 A 20021011 JP 2002-1107
200201
08

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JP 3610948 B2 20050119
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JP 3580287 B2 20041020
CA 2435794 A1 20020801 CA 2002-2435794
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AU 2002226713 A1 20020806 AU 2002-226713
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EP 1361622 A1 20031112 EP 2002-716365
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HU 2003003850 A2 20040301 HU 2003-3850
200201
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CN 1498438 A 20040519 CN 2002-807169
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JP 3580305 B2 20041020 JP 2002-560224
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US 2004121239 A1 20040624 US 2003-466913
200307
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HK 1064216 A1 20061110 HK 2004-106907
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PRAI JP 2001-15466 A 20010124 <--
JP 2001-15467 A 20010124 <--
WO 2002-JP518 W 20020124 <--

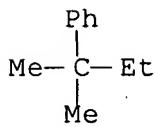
OS MARPAT 137:143036

AB The **electrolyte** soln., for secondary Li **batteries**, contains 0.1-10% tert-alkylbenzene and 0.1-1.5% biphenyl derivs. Preferably, the alkylbenzene has 1-5 tert-alkyl groups connected to a benzene ring, where each tert-alkyl group has 3 C1-4 alkyl groups connected to a C atom. Another type of the **electrolyte** soln. contains 0.1-20% tert-alkylbenzene, where the tert-alkyl group is a C5-13 group. The secondary Li **battery** uses either **electrolyte** soln.

IT 2049-95-8, tert-Pentylbenzene
(**electrolyte** solns. contg. tert-alkylbenzene and biphenyl derivs. for secondary lithium **batteries**)

RN 2049-95-8 HCA

CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



IC ICM H01M010-40
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST secondary lithium **battery electrolyte** tertiary
 alkylbenzene biphenyl
 IT **Battery electrolytes**
 (electrolyte solns. contg. tert-alkylbenzene and
 biphenyl derivs. for secondary lithium **batteries**)
 IT 84-15-1, o-Terphenyl 92-52-4, Biphenyl, uses 96-49-1, Ethylene
 carbonate 98-06-6, tert-Butylbenzene 105-58-8, Diethyl carbonate
 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate
 623-53-0, Methyl ethyl carbonate 644-08-6, 4-Methylbiphenyl
 2049-95-8, tert-Pentylbenzene 4170-84-7,
 (1,1-Diethylpropyl)benzene 4237-70-1 21324-40-3, Lithium
 hexafluorophosphate 444603-90-1
 (electrolyte solns. contg. tert-alkylbenzene and
 biphenyl derivs. for secondary lithium **batteries**)
 RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 5 OF 8 HCA COPYRIGHT 2007 ACS on STN
 AN 136:297434 HCA Full-text
 TI Secondary lithium **battery** and nonaqueous
 electrolyte solution
 IN Hamamoto, Toshikazu; Ueki, Akira; Abe, Koji; Miyoshi, Kazuhiro
 PA Ube Industries, Ltd., Japan
 SO PCT Int. Appl., 23 pp.
 CODEN: PIXXD2

DT Patent
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2002029922	A1	20020411	WO 2001-JP8724	200110 03

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GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
 NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,
 TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH,
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE,
 TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,
 TD, TG

AU 200192346 A 20020415 AU 2001-92346 200110
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CA 2424735 A1 20030402 CA 2001-2424735 200110
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EP 1324417 A1 20030702 EP 2001-972678 200110
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CN 1698231 A 20051116 CN 2001-820005 200110
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JP 3938045 B2 20070627 JP 2002-533427 200110
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US 2004028996 A1 20040212 US 2003-398184 200304
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JP 2006120650 A 20060511 JP 2005-347657 200512
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PRAI JP 2000-303641 A 20001003 <--
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 JP 2002-533427 A3 20011003 <--
 WO 2001-JP8724 W 20011003 <--

JP 2005-347657 A3 20051201

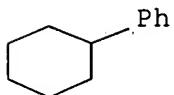
AB The **battery** has a Co Li oxide or Li Ni oxide cathode, a Li (alloy) or Li intercalating carbonaceous anode, and a nonaq. **electrolyte** soln.; where the **electrolyte** soln. contains a dissolved org. compd., which decompns. during overcharge to form a decompn. product that dissolves Co or Ni from the cathode and deposit in on the anode, to prevent vigorous heating during overcharge. The nonaq. **electrolyte** soln. contains an org compd. having an oxidn. potential of 4.6-5.0 V vs Li, and is preferably a tert-alkylbenzene deriv.

IT 827-52-1, Cyclohexylbenzene 2049-95-8,
tert-Pentylbenzene

(nonaq. **electrolyte** solns. contg. alkylbenzene derivs.
for overcharge protection in secondary lithium **batteries**
)

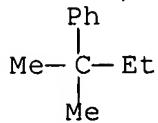
RN 827-52-1 HCA

CN Benzene, cyclohexyl- (CA INDEX NAME)



RN 2049-95-8 HCA

CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium **battery** overcharge protection

electrolyte additive; tertiary alkylbenzene deriv lithium
battery overcharge protection

IT **Battery electrolytes**

(nonaq. **electrolyte** solns. contg. alkylbenzene derivs.
for overcharge protection in secondary lithium **batteries**
)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate
108-32-7, Propylene carbonate 21324-40-3, Lithium
hexafluorophosphate

(nonaq. **electrolyte** solns. contg. alkylbenzene derivs.
for overcharge protection in secondary lithium **batteries**
)

IT 98-06-6, tert-Butylbenzene **827-52-1**, Cyclohexylbenzene
2049-95-8, tert-Pentylbenzene 3972-65-4,
1-Bromo-4-tert-butylbenzene
(nonaq. **electrolyte** solns. contg. alkylbenzene derivs.
for overcharge protection in secondary lithium **batteries**
)

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

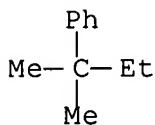
L41 ANSWER 6 OF 8 HCA COPYRIGHT 2007 ACS on STN
AN 134:46039 HCA Full-text
TI Characterization of emissions from diffusion flare systems
AU Strosher, Mel T.
CS Alberta Research Council, Calgary, AB, Can.
SO Journal of the Air & Waste Management Association (2000),
50(10), 1723-1733
CODEN: JAWAFC; ISSN: 1096-2247
PB Air & Waste Management Association
DT Journal
LA English
AB Emissions from flares typical like at oil-field **battery** sites in Alberta, Canada, were examd. to det. the degree to which the flared gases were burned and to characterize the combustion products in the emissions. The study consisted of lab.-, pilot-scale, and field-scale investigations. Combustion of all hydrocarbon fuels in lab.- and pilot-scale tests produced a complex variety of hydrocarbon products within the flame, primarily by pyrolytic reactions. Acetylene, ethylene, benzene, styrene, ethynyl benzene, and naphthalene were the major constituents produced by conversion of >10% of the CH₄ within the flames. A majority of hydrocarbons produced within pure gas fuel flames were effectively destroyed in the outer combustion zone, resulting in combustion efficiencies >98% as measured in the emissions. Adding liq. hydrocarbon fuels or condensates to pure gas streams had the largest effect on impairing the ability of the resulting flame to destroy pyrolytically-produced hydrocarbons as well as original hydrocarbon fuels directed to the flare. Cross-winds also reduced combustion efficiency (CE) of co-flowing gas/condensate flames by causing more unburned fuel and pyrolytically-produced hydrocarbons to escape into the emissions. Flaring soln. gas at oil-field **battery** sites burned with an efficiency of 62-82%, depending on how much fuel was directed to flare or how much liq. hydrocarbon was in the knockout drum. In most cases, benzene, styrene, ethynyl benzene, ethynyl-Me benzenes, toluene, xylenes, acenaphthylene, biphenyl, and fluorene were the

most abundant compds. in any emissions examd. in field flare testing. Emissions from sour soln. gas flaring also contained reduced S compds. and thiophenes.

IT 2049-95-8, (1,1-Dimethylpropyl)benzene
(flame type, condensates and other liq. droplets during gaseous fuel flaring, and cross-winds effect on chem. compn. of oil and gas industry diffusion flare system emissions, Canada)

RN 2049-95-8 HCA

CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



CC 59-4 (Air Pollution and Industrial Hygiene)
Section cross-reference(s): 51

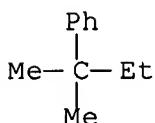
IT 50-32-8, Benzo(a)pyrene, occurrence 65-85-0, Benzoic acid, occurrence 71-43-2, Benzene, occurrence 86-73-7, 9H-Fluorene 90-00-6, 2-Ethylphenol 90-12-0, 1-Methylnaphthalene 91-20-3, Naphthalene, occurrence 91-57-6, 2-Methylnaphthalene 92-52-4, 1,1'-Biphenyl, occurrence 95-48-7, 2-Methylphenol, occurrence 95-63-6, 1,2,4-Trimethylbenzene 95-87-4, 2,5-Dimethylphenol 95-93-2, 1,2,4,5-Tetramethylbenzene 98-82-8, (1-Methylethyl)-benzene 99-87-6, 1-Methyl-4-(1-methylethyl)benzene 100-41-4, Ethylbenzene, occurrence 100-42-5, Ethenylbenzene, occurrence 103-65-1, Propylbenzene 104-87-0, 4-Methylbenzaldehyde 106-42-3, 1,4-Dimethylbenzene, occurrence 106-44-5, 4-Methylphenol, occurrence 108-67-8, 1,3,5-Trimethylbenzene, occurrence 108-68-9, 3,5-Dimethylphenol 108-87-2, Methylcyclohexane 108-88-3, Methylbenzene, occurrence 109-66-0, Pentane, occurrence 110-54-3, Hexane, occurrence 110-82-7, Cyclohexane, occurrence 111-65-9, Octane, occurrence 111-84-2, Nonane 112-40-3, Dodecane 120-12-7, Anthracene, occurrence 124-18-5, Decane 129-00-0, Pyrene, occurrence 142-82-5, Heptane, occurrence 192-97-2, Benzo(e)pyrene 203-64-5, 4H-Cyclopenta(def)phenanthrene 206-44-0, Fluoranthene 208-96-8, Acenaphthylene 217-59-4, Triphenylene 218-01-9, Chrysene 232-95-1, Naphtho[2,1-B]furan 238-84-6, 11H-Benzo(a)fluorene 243-17-4, 11H-Benzo(b)fluorene 259-79-0, Biphenylene 488-23-3, 1,2,3,4-Tetramethylbenzene 527-53-7, 1,2,3,5-Tetramethylbenzene 536-74-3, Ethynylbenzene 562-49-2, 3,3-Dimethylpentane 571-58-4, 1,4-Dimethylnaphthalene 571-61-9, 1,5-Dimethylnaphthalene 575-37-1, 1,7-Dimethylnaphthalene 581-40-8, 2,3-Dimethylnaphthalene 589-34-4,

3-Methylhexane 611-14-3, 1-Ethyl-2-methylbenzene 611-15-4,
1-Ethenyl-2-methyl-benzene 613-12-7, 2-Methylanthracene
613-59-2, 2-(Phenylmethyl)naphthalene 619-99-8, 3-Ethylhexane
620-83-7, 1-Methyl-4-(phenylmethyl)benzene 638-04-0,
cis-1,3-Dimethylcyclohexane 643-93-6, 3-Methyl-1,1'-biphenyl
700-12-9, Pentamethylbenzene 713-36-0, 1-Methyl-2-
(phenylmethyl)benzene 832-71-3, 3-Methylphenanthrene 844-51-9,
2,5-Cyclohexadiene-1,4-dione, 2,5-Diphenyl- 886-66-8, Benzene,
1,1'-(1,3-Butadiyne-1,4-diyl)bis- 922-28-1, 3,4-Dimethylheptane
933-98-2, 1-Ethyl-2,3-dimethylbenzene 934-80-5,
4-Ethyl-1,2-dimethylbenzene 939-27-5, 2-Ethynaphthalene
1074-17-5, 1-Methyl-2-propylbenzene 1120-21-4, Undecane
1196-58-3, (1-Ethylpropyl)benzene 1430-97-3, 2-Methyl-9H-fluorene
1576-67-6, 3,6-Dimethylphenanthrene 1678-91-7, Ethylcyclohexane
1678-98-4, (2-Methylpropyl)-cyclohexane 1730-37-6,
1-Methyl-9H-fluorene 1812-51-7, 1,1'-Biphenyl, 2-Ethyl-
1839-63-0, 1,3,5-Trimethylcyclohexane **2049-95-8**,
(1,1-Dimethylpropyl)benzene 2050-24-0, 1,3-Diethyl-5-methylbenzene
2051-30-1, 2,6-Dimethyloctane 2131-41-1, 1,4,5-
Trimethylnaphthalene 2131-42-2, 1,4,6-Trimethylnaphthalene
2206-23-7, 3-Penten-1-yne 2234-75-5, 1,2,4-Trimethylcyclohexane
2452-99-5, 1,2-Dimethylcyclopentane 2531-84-2,
2-Methylphenanthrene 2610-95-9 3061-36-7, 1,4-Diphenoxybenzene
3379-37-1, Benzene, 1,2-Diphenoxy- 3442-78-2, 2-Methylpyrene
3674-65-5, 2,3-Dimethylphenanthrene 3674-66-6,
2,5-Dimethylphenanthrene 3674-73-5, 2,3,5-Trimethylphenanthrene
3855-26-3, 2-Ethyl-4-methylphenol 4425-82-5, 9-Methylene-9H-
fluorene 4489-84-3, (3-Methyl-2-butenyl)benzene 4612-63-9,
2,3-Dimethyl-9H-fluorene 4957-14-6 5911-04-6, 3-Methylnonane
6975-92-4, 2,5-Dimethyl-1-hexene 13151-34-3, 3-Methyldecane
14064-48-3 17057-82-8 17302-23-7, 4,5-Dimethylnonane
21895-13-6 21895-16-9 22364-43-8 25155-15-1,
Methyl(1-methylethyl)benzene 25340-17-4, Diethylbenzene
29053-04-1, Cyclopentane, 1-Methyl-3-(2-methylpropyl)- 55712-60-2,
Benzo(b)thiophene, 3-(2-Naphthalenyl)- 61142-07-2 74685-42-0,
1-Methyl-2-(2-phenylethenyl)benzene
(flame type, condensates and other liq. droplets during gaseous
fuel flaring, and cross-winds effect on chem. compn. of oil and
gas industry diffusion flare system emissions, Canada)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 7 OF 8 HCA COPYRIGHT 2007 ACS on STN
AN 106:14901 HCA Full-text
TI Studies on biomimetic membranes IX. Ionic permeability and
stability of supported liquid membranes
AU Kikkawa, Masayoshi; Sugiura, Masaaki; Shinbo, Toshio; Yamaguchi,

Tomohiko; Nishimura, Koichiro; Fukaya, Toshio; Kodaka, Masato
CS Natl. Chem. Lab. Ind., Japan
SO Kagaku Gijutsu Kenkyusho Hokoku (1986), 81(6), 301-7
CODEN: KGKHEP; ISSN: 0388-3213
DT Journal
LA Japanese
AB The up-hill transport rate of picrate anion across supported liq. membranes, prep'd. from various org. liqs. and contg. K⁺ carriers, and the membrane potential with elapsed time were measured. The ionic permeability and stability of the liq. membranes and the carrier-mediated transport were discussed. When the arom. compds. such as nitrophenol derivs., arom. ethers, alkylbenzenes, and alkylbenzoates were used as the org. liq., a large flux of picrate anion was obsd. in most of these liq. membranes. In addn., the changes of membrane potentials were small because of high stability of the membranes. On the other hand, the picrate-ion flux for the alkyl dicarboxylates was small except for their Bu esters. In the case of glycerides and phosphates, the picrate flux was affected by the type of carrier. Most of these liq. membranes showed a high stability.
IT 2049-95-8, **tert-Amylbenzene**
(liq. membranes, ionic permeability and stability of potassium carrier-contg.)
RN 2049-95-8 HCA
CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)

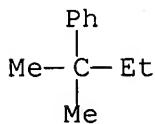


CC 6-6 (General Biochemistry)
Section cross-reference(s): 22
IT **Electrolytes**
(permeability of org. liq. membranes contg. potassium carriers to)
IT 60-01-5, Tri-n-butyryl 78-30-8 78-32-0 78-42-2 99-62-7,
m-Diisopropylbenzene 100-18-5, p-Di-iso-propylbenzene 101-81-5,
Diphenylmethane 101-84-8, Diphenyl ether 102-25-0,
1,3,5-Triethylbenzene 103-23-1 103-50-4, Dibenzyl ether
105-05-5, p-Diethylbenzene 105-75-9, Fumaric acid di-n-butyl ester
105-76-0, Maleic acid di-n-butyl ester 105-99-7, Adipic acid
di-n-butyl ester 106-19-4, Adipic acid di-n-propyl ester
109-43-3, Sebacic acid di-n-butyl ester 111-03-5,
α-Monoolein 112-80-1, Oleic acid, properties 120-50-3,

Benzoic acid iso-butyl ester 122-62-3, Sebacic acid di (2-ethylhexyl) ester 123-25-1, Succinic acid diethyl ester 135-01-3, o-Diethylbenzene 136-60-7, Benzoic acid n-butyl ester 141-04-8, Adipic acid di-iso-butyl ester 141-05-9, Maleic acid diethyl ester 141-28-6, Adipic acid diethyl ester 141-93-5, m-Diethylbenzene 142-77-8 298-07-7 538-23-8 538-68-1, n-Amylbenzene 621-70-5 622-08-2, 2-(Benzylxy) ethanol 624-48-6 627-93-0, Adipic acid dimethyl ester 939-48-0, Benzoic acid iso-propyl ester 1077-16-3 1078-71-3 **2049-95-8**, **tert-Amylbenzene** 2049-96-9 2216-12-8, o-Nitrophenyl phenyl ether 2287-83-4 2998-04-1, Adipic acid diallyl ester 4074-90-2, Adipic acid divinyl ester 6938-94-9, Adipic acid di-isopropyl ester 7664-38-2D, esters 13023-13-7 13565-36-1, p-Nitrophenyl heptyl ether 15440-98-9, p-Nitrophenyl hexyl ether 16507-61-2, Oleyl chloride 37682-29-4, o-Nitrophenyl octyl ether 82052-70-8
(liq. membranes, ionic permeability and stability of potassium carrier-contg.)

L41 ANSWER 8 OF 8 HCA COPYRIGHT 2007 ACS on STN
AN 51:85587 HCA Full-text
OREF 51:15454b-d
TI The **electrolysis** of some 3-arylpropionic acids; isomerization of free radicals
AU Breederveld, H.; Kooyman, E. C.
CS Royal Dutch/Shell Group, Amsterdam
SO Recueil des Travaux Chimiques des Pays-Bas et de la Belgique (1957), 76, 297-321
CODEN: RTCPB4; ISSN: 0370-7539
DT Journal
LA English
AB The **electrolysis** of some substituted 3-arylpropionic acids and possible rearrangement of free radicals formed through discharge of anions was investigated. PhCMe₂CH₂CO₂H in MeOH with excess AcONa gave 27 mole-% **tert-amylobenzene**, 4% bineophyl (PhCMe₂CH₂)₂ (I), 7% styrenes, and 15% recovered acid; unidentified O compds. amounted to 25% by wt. of the acid. Ph₃CCH₂CO₂H (II), in MeOH contg. Na ions gave chiefly Ph₂C(OMe)CH₂CO₂Ph. Similarly, (p-Me₃CC₆H₄)₃CCH₂CO₂H (III) gave p-Me₃CC₆H₄ ester (IV) of (p-Me₃CC₆H₄)₂C(OMe)CH₂CO₂H. New compds. prep'd. were: III, m. 251-3°; IV, m. 180-1°; I, m. 60-1°; Ph₂C(OH)CH₂CO₂Me, m. 105-6°; Ph₂C(OMe)CH₂CO₂Me (V), m. 52-4°; (p-Me₃CC₆H₄)₂C(OH)CH₂CO₂Me, m. 156-8°; p-Me₃CCH₂CHCO₂Me, m. 69-70°, and the free acid, m. 198-9°; MeO-CH₂CH₂CO₂Ph (VI), b₈ 120°, n_{D20} 1.4960; Ph₂CHCH₂CO₂Ph, (VIII), m. 84-5°. The following new CO-stretching frequencies (μ) in the infrared were detd.: VII, 5.68; VI, 5.68; EtCO₂Ph, 5.66; Ph₂CHCH₂CO₂Me, 5.75; MeOCH₂CH₂CO₂Me, 5.75; V, 5.75.

IT 2049-95-8P, Benzene, tert-pentyl-
(formation by **electrolysis** of β,β -
dimethylhydrocinnamic acid)
RN 2049-95-8 HCA
CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)



CC 10 (Organic Chemistry)
IT Radicals
(isomerization in **electrolysis** of hydrocinnamic acid
derivs.)
IT Rearrangements
(of free radicals in **electrolysis** of hydrocinnamic acid
derivs.)
IT 501-52-0, Hydrocinnamic acid
(derivs., **electrolysis** of)
IT 900-91-4, Propionic acid, 3,3,3-triphenyl- 1010-48-6,
Hydrocinnamic acid, β,β -dimethyl- 103327-71-5, Propionic
acid, 3,3,3-tris(p-tert-butylphenyl)-
(**electrolysis** of)
IT 2049-95-8P, Benzene, tert-pentyl- 17648-05-4P, Hexane,
2,5-dimethyl-2,5-diphenyl-
(formation by **electrolysis** of β,β -
dimethylhydrocinnamic acid)

=> D L48 1-14 BIB ABS HITSTR HITIND

L48 ANSWER 1 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 140:378028 HCA Full-text
TI Nonaqueous **electrolytic** solution containing specific
amount of phosphinic ester compound and nonaqueous
electrolyte secondary **battery** containing the same
IN Noda, Daisuke; Onuki, Masamichi; Shima, Kunihisa
PA Mitsubishi Chemical Corporation, Japan
SO PCT Int. Appl., 48 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2004038846	A1	20040506	WO 2003-JP13432	200310 21
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003280566	A1	20040513	AU 2003-280566	200310 21
<--				
JP 2004363077	A	20041224	JP 2003-361115	200310 21
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EP 1555711	A1	20050720	EP 2003-769911	200310 21
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1685556	A	20051019	CN 2003-80100013	200310 21
<--				
JP 2004221054	A	20040805	JP 2003-369589	200310 29
<--				
US 2005014071	A1	20050120	US 2004-855489	200405 28
<--				
US 7169511	B2	20070130		

US 2007087270

A1

20070419

US 2006-558070

200611
09

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PRAI JP 2002-306901 A 20021022 <--
JP 2002-372323 A 20021224 <--
JP 2003-136322 A 20030514
WO 2003-JP13432 W 20031021
US 2004-855489 A1 20040528

AB Disclosed are an **electrolytic** soln. and secondary **battery** that inhibit deterioration of **battery** performance at high-temp. storage or high-temp. continuous charging. In particular, a nonaq. **electrolytic** soln. for secondary **battery** comprising a solute, a phosphinic ester compd. and a nonaq. org. solvent contg. these, characterized in that the content of phosphinic ester compd. is regulated to a given level relative to the total wt. of nonaq. **electrolytic** soln.

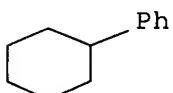
IT 827-52-1, Cyclohexylbenzene 872-36-6,

Vinylene carbonate

(nonaq. **electrolytic** soln. contg. specific amt. of phosphinic ester compd. for lithium secondary **battery**)

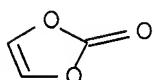
RN 827-52-1 HCA

CN Benzene, cyclohexyl- (CA INDEX NAME)



RN 872-36-6 HCA

CN 1,3-Dioxol-2-one (CA INDEX NAME)



IC ICM H01M010-40
ICS H01M004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST nonaq **electrolyte** soln phosphinic ester compd secondary
battery; lithium secondary **battery**

IT Secondary **batteries**
(lithium; nonaq. **electrolytic** soln. contg. specific

amt. of phosphinic ester compd. for lithium secondary
battery)

IT **Battery electrolytes**

(nonaq. **electrolytic** soln. contg. specific amt. of
phosphinic ester compd. for lithium secondary **battery**)

IT 2950-47-2, Butyl dibutylphosphinate 4775-09-1, Ethyl
diethylphosphinate 6389-79-3, Methyl methylphenylphosphinate
7163-67-9, Methyl dibutylphosphinate

(nonaq. **electrolytic** soln. contg. specific amt. of
phosphinic ester compd. for lithium secondary **battery**)

IT 827-52-1, Cyclohexylbenzene 872-36-6,

Vinylene carbonate

(nonaq. **electrolytic** soln. contg. specific amt. of
phosphinic ester compd. for lithium secondary **battery**)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 2 OF 14 HCA COPYRIGHT 2007 ACS on STN

AN 140:378001 HCA Full-text

TI Secondary nonaqueous **electrolyte battery**

IN Matsui, Toru; Deguchi, Masaki; Sonoda, Kumiko; Nishimura, Makiko;
Koshina, Shigeru

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2004134261	A	20040430	JP 2002-298206	200210 11

<--

PRAI JP 2002-298206 20021011 <--

AB The **battery** comprises a cathode, an anode, and a nonaq. **electrolyte** soln., having a solute dissolved in a solvent mixt. which contains a main solvent and a secondary solvent; where the secondary solvent comprises a compd. A, selected from cyclohexyl benzene, biphenyl, and/or di-Ph ether, and a compd. X whose oxidn. potential is 0.1-0.4 V higher than that of the compd. A; and the wt. ratio of the secondary solvent to the solvent mixt. and the compd. X to the secondary solvent is 0.01-5 and 20-99 resp.

IT 827-52-1, Cyclohexyl benzene 872-36-6,

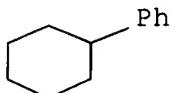
Vinylene carbonate

(**electrolyte** solvents contg. carbonates and arom.

compds. for secondary **batteries**)

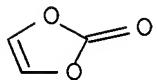
RN 827-52-1 HCA

CN Benzene, cyclohexyl- (CA INDEX NAME)



RN 872-36-6 HCA

CN 1,3-Dioxol-2-one (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary **battery** nonaq **electrolyte** solvent
carbonate arom compd

IT **Battery electrolytes**

(**electrolyte** solvents contg. carbonates and arom.
compds. for secondary **batteries**)

IT 92-52-4, Biphenyl, uses 96-48-0, γ -Butyrolactone 96-49-1,
Ethylene carbonate 98-82-8 100-41-4, Phenyl ethane, uses
101-81-5, Diphenyl methane 101-84-8, Diphenyl ether 105-58-8,
Diethyl carbonate 108-88-3, Phenyl methane, uses 321-60-8,
2-Fluorobiphenyl 330-93-8, Bis(4-fluorophenyl) ether 362-59-4,
2-Trifluoromethyl biphenyl 396-64-5 519-73-3, Triphenyl methane
527-21-9, Tetrafluoro-p-benzoquinone 623-53-0, Ethyl methyl
carbonate 791-28-6, Triphenylphosphine oxide 827-52-1,
Cyclohexyl benzene 872-36-6, **Vinylene**

carbonate 960-71-4, Triphenyl borane 2367-02-4,
4-Trifluoromethyl diphenyl ether 14283-07-9, Lithium
tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate
142990-38-3 142990-39-4 684215-50-7 684215-51-8

(**electrolyte** solvents contg. carbonates and arom.
compds. for secondary **batteries**)

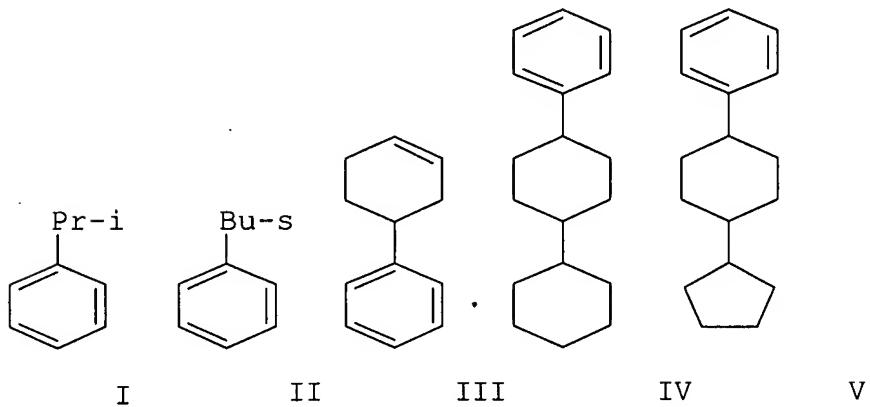
L48 ANSWER 3 OF 14 HCA COPYRIGHT 2007 ACS on STN

AN 140:202476 HCA Full-text

TI Secondary nonaqueous **electrolyte battery** and

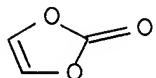
nonaqueous **electrolyte** solution
IN Kotado, Minoru; Kinoshita, Shinichi
PA Mitsubishi Chemical Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004071459	A	20040304	JP 2002-231475	20020808
PRAI	JP 2002-231475		20020808	<--	
GI					

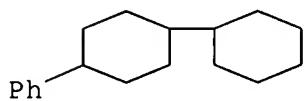


AB The **battery** has a Li-intercalating cathode, a Li-intercalating anode, and an **electrolyte** soln. contg. a nonaq. solvent mixt. and a Li salt; where the solvent mixt. contains 0.01-10 % cyclohexyl benzene and compd. I - V having total content \leq 5000 ppm vs. the cyclohexyl benzene.
IT 872-36-6, **Vinylene carbonate**
20273-27-2 663619-88-3
(**electrolyte** solns. contg. cyclohexyl benzene and benzene derivs. for secondary **batteries**)

RN 872-36-6 HCA
CN 1,3-Dioxol-2-one (CA INDEX NAME)



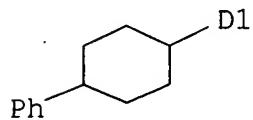
RN 20273-27-2 HCA
CN Benzene, [1,1'-bicyclohexyl]-4-yl- (9CI) (CA INDEX NAME)



RN 663619-88-3 HCA
CN Benzene, [4-(methylcyclopentyl)cyclohexyl]- (9CI) (CA INDEX NAME)



D1-Me



IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary **battery electrolyte** benzene deriv
cyclohexyl benzene
IT **Battery electrolytes**
Secondary **batteries**
(**electrolyte** solns. contg. cyclohexyl benzene and
benzene derivs. for secondary **batteries**)
IT 96-49-1, Ethylene carbonate 98-82-8, Isopropyl benzene 538-93-2,
Isobutyl benzene 623-53-0, Ethyl methyl carbonate **872-36-6**
, **Vinyleno carbonate** 4994-16-5 7782-42-5,

Graphite, uses 12190-79-3, Cobalt lithium oxide (CoLiO₂)
20273-27-2 21324-40-3, Lithium hexafluorophosphate
663619-88-3
(**electrolyte** solns. contg. cyclohexyl benzene and
benzene derivs. for secondary **batteries**)

L48 ANSWER 4 OF 14 HCA COPYRIGHT 2007 ACS on STN

AN 140:184751 HCA Full-text

TI Secondary lithium **battery** nonaqueous **electrolytes**
and secondary lithium **batteries** with prevented
overcharging

IN Shizuka, Kenji; Kinoshita, Shinichi; Noda, Daisuke

PA Mitsubishi Chemical Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004063114	A	20040226	JP 2002-216090	200207 25

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PRAI JP 2002-216090 20020725 <--

OS MARPAT 140:184751

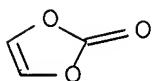
AB Li salt-contg. nonaq. **electrolytes** also contg. overcharging
inhibitors and (di)sulfides are claimed. Preferable structure for
the the overcharging inhibitor is C₆R₁R₂R₃R₄R₅R₆ (R₁₋₆ = H, halogen,
(un)substituted hydrocarbon, alkoxy, aryloxy; R₁ + R₂ may form
(un)substituted, phenyleneoxy, ethyleneoxy, trimethyleneoxy,
propyleneoxy, vinyleneoxy). Preferable overcharging inhibitors and
(di)sulfides are also given.

IT 872-36-6, **Vinylene carbonate**

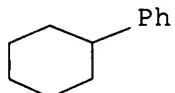
(**electrolyte** solvent; lithium secondary
batteries with nonaq. **electrolytes** contg.
overcharging inhibitors and disulfides)

RN 872-36-6 HCA

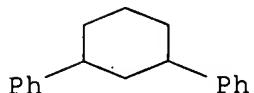
CN 1,3-Dioxol-2-one (CA INDEX NAME)



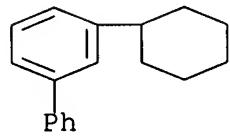
IT 827-52-1, Cyclohexylbenzene 1667-08-9
1973-15-5, 3-Cyclohexylbiphenyl 4016-06-2,
1,3-Dicyclohexylbenzene 20273-26-1
(overcharging inhibitor; lithium secondary **batteries**
with nonaq. **electrolytes** contg. overcharging inhibitors
and disulfides)
RN 827-52-1 HCA
CN Benzene, cyclohexyl- (CA INDEX NAME)



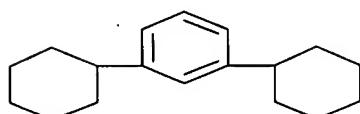
RN 1667-08-9 HCA
CN Benzene, 1,1'-(1,3-cyclohexanediyl)bis- (9CI) (CA INDEX NAME)



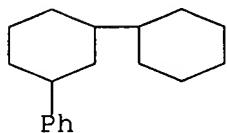
RN 1973-15-5 HCA
CN 1,1'-Biphenyl, 3-cyclohexyl- (CA INDEX NAME)



RN 4016-06-2 HCA
CN Benzene, 1,3-dicyclohexyl- (CA INDEX NAME)



RN 20273-26-1 HCA
CN Benzene, [1,1'-bicyclohexyl]-3-yl- (CA INDEX NAME)



IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 25, 27
ST nonaq **electrolyte** lithium secondary **battery**;
overcharging inhibitor lithium secondary **battery**
electrolyte; disulfide additive lithium secondary
battery electrolyte
IT Disulfides
(**electrolytes** contg.; lithium secondary
batteries with nonaq. **electrolytes** contg.
overcharging inhibitors and disulfides)
IT **Battery electrolytes**
(lithium secondary **batteries** with nonaq.
electrolytes contg. overcharging inhibitors and
disulfides)
IT Secondary **batteries**
(lithium; lithium secondary **batteries** with nonaq.
electrolytes contg. overcharging inhibitors and
disulfides)
IT 21324-40-3, Lithium hexafluorophosphate (LiPF₆)
(**electrolyte** salt; lithium secondary **batteries**
with nonaq. **electrolytes** contg. overcharging inhibitors
and disulfides)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate
872-36-6, **Vinylene carbonate**
(**electrolyte** solvent; lithium secondary
batteries with nonaq. **electrolytes** contg.
overcharging inhibitors and disulfides)
IT 2127-03-9, 2,2'-Dipyridyl disulfide 2127-10-8,
2,2'-Dithiobis(5-nitropyridine) 2645-22-9, 4,4'-Dipyridyl
disulfide 15658-35-2, 6,6'-Dithiodinicotinic acid
(**electrolytes** contg.; lithium secondary
batteries with nonaq. **electrolytes** contg.
overcharging inhibitors and disulfides)
IT 92-52-4, Biphenyl, uses 95-72-7, 2-Chloro-p-xylene 101-81-5,

Diphenylmethane 101-84-8, Diphenyl ether 103-29-7,
 1,2-Diphenylethane 104-66-5, 1,2-Diphenoxymethane 104-92-7,
 4-Bromoanisole 132-64-9, Dibenzofuran 321-60-8, 2-Fluorobiphenyl
 324-74-3, 4-Fluorobiphenyl 362-56-1, 1,2,4,5-Tetrafluoro-3,6-
 dimethoxybenzene 392-69-8, 2-Fluoromesitylene 396-64-5,
 3,3'-Difluorobiphenyl 398-23-2, 4,4'-Difluorobiphenyl 452-10-8,
 2,4-Difluoroanisole 456-49-5, 3-Fluoroanisole 459-60-9,
 4-Fluoroanisole 583-70-0, 4-Bromo-m-xylene 612-75-9,
 3,3'-Dimethylbiphenyl 613-33-2, 4,4'-Dimethylbiphenyl 615-60-1,
 4-Chloro-o-xylene 623-12-1, 4-Chloroanisole 643-58-3,
 2-Methylbiphenyl 643-93-6, 3-Methylbiphenyl 644-08-6,
 4-Methylbiphenyl 766-51-8, 2-Chloroanisole 778-22-3,
 2,2-Diphenylpropane 827-52-1, Cyclohexylbenzene
 1625-92-9, 4-tert-Butylbiphenyl 1667-08-9
 1973-15-5, 3-Cyclohexylbiphenyl 2845-89-8, 3-Chloroanisole
 3061-36-7, 1,4-Diphenoxymethane 3150-40-1, 2,3,5,6-Tetrafluoro-4-
 methylanisole 3379-38-2, 1,3-Diphenoxymethane 4016-06-2,
 1,3-Dicyclohexylbenzene 6738-04-1, 2-Phenoxybiphenyl 7051-16-3,
 1,3-Dimethoxy-5-chlorobenzene 17715-69-4, 1,3-Dimethoxy-4-
 bromobenzene 20273-26-1 25245-34-5 26140-60-3,
 Terphenyl 52189-63-6, 1-Fluoro-3,5-dimethoxybenzene 82830-49-7,
 1,4-Dimethoxy-2-fluorobenzene 93343-10-3, 3,5-Difluoroanisole
 97762-38-4 258268-48-3
 (overcharging inhibitor; lithium secondary **batteries**
 with nonaq. **electrolytes** contg. overcharging inhibitors
 and disulfides)

L48 ANSWER 5 OF 14 HCA COPYRIGHT 2007 ACS on STN

AN 140:184697 HCA Full-text

TI Secondary nonaqueous **battery** and electronic device using
 the **battery**

IN Kita, Fusaji; Higashiguchi, Masaharu; Sakata, Hideo

PA Hitachi Maxell Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2004055253	A	20040219	JP 2002-209221	200207 18

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PRAI JP 2002-209221

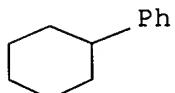
20020718 <--

AB The **battery** has a cathode, an anode, and an **electrolyte** soln.; where the **electrolyte** soln. contains 0.5-15 % ionic compd., having an alkyl group bond to an arom. ring; and 1-10000 ppm arom. amine, sulfide, phosphite, and/or quinone. The device has the above **battery**; where the **battery** is charged at a current of ≥ 1 C.

IT 827-52-1, Cyclohexyl benzene
(**electrolyte** solns. contg. arom. ionic compds. and arom. amine, sulfide, phosphite, and/or quinone for secondary **batteries**)

RN 827-52-1 HCA

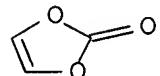
CN Benzene, cyclohexyl- (CA INDEX NAME)



IT 872-36-6, Vinylene carbonate
(secondary **batteries** contg. arom. ionic compds. and arom. amine, sulfide, phosphite, and/or quinone in **electrolyte** solns. for electronic devices)

RN 872-36-6 HCA

CN 1,3-Dioxol-2-one (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST electronic device secondary **battery electrolyte**
arom ionic compd; **battery electrolyte** arom amine
sulfide phosphite quinone

IT **Battery electrolytes**

Secondary **batteries**

(**electrolyte** solns. contg. arom. ionic compds. and arom. amine, sulfide, phosphite, and/or quinone for secondary **batteries**)

IT 7782-42-5, Graphite, uses

(anode; secondary **batteries** contg. arom. ionic compds. and arom. amine, sulfide, phosphite, and/or quinone in **electrolyte** solns. for electronic devices)

IT 12190-79-3, Cobalt lithium oxide (CoLiO₂)
(cathode; secondary **batteries** contg. arom. ionic
compds. and arom. amine, sulfide, phosphite, and/or quinone in
electrolyte solns. for electronic devices)

IT 96-49-1, Ethylene carbonate 135-88-6, Phenyl- β -naphthylamine
462-06-6, Fluorobenzene 623-53-0, Methyl ethyl carbonate
827-52-1, Cyclohexyl benzene 1120-71-4, 1,3-Propane
sultone 21324-40-3, Lithium hexafluorophosphate
(**electrolyte** solns. contg. arom. ionic compds. and
arom. amine, sulfide, phosphite, and/or quinone for secondary
batteries)

IT 101-02-0, Triphenyl phosphite 139-66-2, Diphenyl sulfide
872-36-6, **Vinylene carbonate** 903-19-5
1126-80-3, Butyl phenyl sulfide 7434-44-8, Butyl Diphenyl
phosphite 35735-32-1 52066-84-9 132843-44-8
(secondary **batteries** contg. arom. ionic compds. and
arom. amine, sulfide, phosphite, and/or quinone in
electrolyte solns. for electronic devices)

L48 ANSWER 6 OF 14 HCA COPYRIGHT 2007 ACS on STN

AN 139:398049 HCA Full-text

TI Secondary nonaqueous-**electrolyte battery** with
electrolyte containing overcharging inhibitor and sulfur
compound

IN Kotado, Minoru

PA Mitsubishi Chemical Corp., Japan

SO Jpn. Kokai Tokyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2003338317	A	20031128	JP 2002-143492	20020517

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PRAI JP 2002-143492 20020517 <--

AB The claimed **battery** is equipped with an **electrolyte** soln. contg. a
compd. which reacts under voltage equal to or higher than max.
operation voltage during overcharging, a cyclic carbonate ester
having unsatd. bond and/or an acid anhydride, and a S-contg. org.
compd. The **battery** provides high safety during overcharging and
high-load discharge capacity after storage.

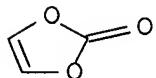
IT 872-36-6, **Vinylene carbonate**

(additive; **electrolyte** contg. overcharging inhibitor

and sulfur compd. for nonaq. **battery**)

RN 872-36-6 HCA

CN 1,3-Dioxol-2-one (CA INDEX NAME)



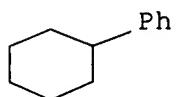
IT 827-52-1, Cyclohexylbenzene

(overcharging inhibitor; **electrolyte** contg.

overcharging inhibitor and sulfur compd. for nonaq.
battery)

RN 827-52-1 HCA

CN Benzene, cyclohexyl- (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST sulfur compd cyclic carbonate anhydride **electrolyte** nonaq

battery; overcharging inhibitor **electrolyte** nonaq

battery safety

IT **Battery electrolytes**

Safety

(**electrolyte** contg. overcharging inhibitor and sulfur
compd. for nonaq. **battery**)

IT Secondary **batteries**

(lithium; **electrolyte** contg. overcharging inhibitor and
sulfur compd. for nonaq. **battery**)

IT 108-30-5, Succinic anhydride, uses 872-36-6,

Vinyleno carbonate

(additive; **electrolyte** contg. overcharging inhibitor
and sulfur compd. for nonaq. **battery**)

IT 66-27-3, Methyl methanesulfonate 67-71-0, Dimethylsulfone

1120-71-4, 1,3-Propanesultone

(**electrolyte** contg. overcharging inhibitor and sulfur
compd. for nonaq. **battery**)

IT 96-49-1, Ethylene carbonate 623-53-0, Ethyl methyl carbonate

(**electrolyte** solvent; **electrolyte** contg.

overcharging inhibitor and sulfur compd. for nonaq.
battery)

IT 21324-40-3, Lithium hexafluorophosphate
(**electrolyte**; **electrolyte** contg. overcharging
inhibitor and sulfur compd. for nonaq. **battery**)

IT 92-52-4, Biphenyl, uses 827-52-1, Cyclohexylbenzene
(overcharging inhibitor; **electrolyte** contg.
overcharging inhibitor and sulfur compd. for nonaq.
battery)

L48 ANSWER 7 OF 14 HCA COPYRIGHT 2007 ACS on STN

AN 139:352674 HCA Full-text

TI Nonaqueous **electrolyte** secondary **battery**

IN Mori, Sumio

PA Japan Storage Battery Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2003308875 A 20031031 JP 2002-115896

200204
18

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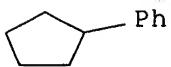
PRAI JP 2002-115896 20020418 <--

AB The secondary **battery** comprises a cathode, an anode, and nonaq.
electrolyte contg. ≥ 1 of sultone compds. (e.g. propane sultone,
propene sultone, butane sultone), cyclic sulfates (e.g. glycol
sulfate, propylene glycol sulfate), and vinylene carbonates, and ≥ 1
of derivs. of alkylbenzenes having tertiary carbon binding to the Ph
groups (e.g. cumene, 1,3-diisopropyl benzene, 1,4-diisopropyl
benzene, 1-Me Pr benzene, 1,3-bis(1-Me Pr)benzene, 1,4-bis(1-Me
Pr)benzene), cycloalkyl benzenes (e.g. cyclohexyl benzene,
cyclopentyl benzene), and biphenyl derivs. (e.g. biphenyl, 2-fluoro
biphenyl, 2-bromo biphenyl, 2-chloro biphenyl). The **battery** is
excellent in high temp. exposure characteristics.

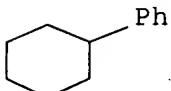
IT 700-88-9, Cyclopentyl benzene 827-52-1,
Cyclohexylbenzene
(nonaq. **electrolyte** secondary **battery**)

RN 700-88-9 HCA

CN Benzene, cyclopentyl- (CA INDEX NAME)



RN 827-52-1 HCA
CN Benzene, cyclohexyl- (CA INDEX NAME)



IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST nonaq **electrolyte** secondary **battery** high temp
exposure
IT **Battery electrolytes**
Secondary batteries
(nonaq. **electrolyte** secondary **battery**)
IT 92-52-4, Biphenyl, uses 98-82-8, Cumene 99-62-7, 1,3-Diisopropyl
benzene 100-18-5, 1,4-Diisopropyl benzene 135-98-8,
1-Methylpropyl benzene 321-60-8, 2-Fluoro biphenyl
700-88-9, Cyclopentyl benzene 827-52-1,
Cyclohexylbenzene 1014-41-1, 1,4-Bis(1-methylpropyl)benzene
1079-96-5, 1,3-Bis(1-methylpropyl)benzene 1120-71-4, Propane
sultone 1633-83-6, Butane sultone 2051-60-7, 2-Chloro biphenyl
2052-07-5, 2-Bromo biphenyl 44508-66-9, 1-Propene-2-sulfonic acid
478784-91-7, Ethylene glycol sulfate
(nonaq. **electrolyte** secondary **battery**)

L48 ANSWER 8 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 139:326026 HCA Full-text
TI Nonaqueous **electrolyte** solution for Li secondary
battery
IN Noda, Daisuke; Shizuka, Kenji; Kinoshita, Shinichi
PA Mitsubishi Chemical Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF

DT Patent
LA Japanese

FAN.CNT 1

PATENT NO.

KIND

DATE

APPLICATION NO.

DATE

PI JP 2003297423

A 20031017

JP 2002-100543

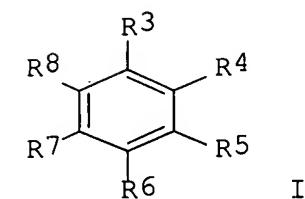
200204
02

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PRAI JP 2002-100543

OS MARPAT 139:326026

GI

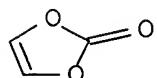


AB The invention relates to a nonaq. **electrolyte** soln. for a Li secondary **battery**, comprising: the sulfone compd. represented by SO₂(R₁)(R₂) [R₁ and R₂ = aryl, and alkyl; R₁ and R₂ may be joined to form a ring structure]; and the arom. compd. with the mol. wt. \leq 500 and represented by I [R₃₋₈ = H, halo, C₁₋₁₂ alkyl, C₅₋₁₂ cycloalkyl, C₆₋₁₂ aryl, and C₁₁₋₁₄ arylcycloalkyl].

IT 872-36-6, **Vinylenecarbonate**
(nonaq. **electrolyte** soln. for Li secondary
battery)

RN 872-36-6 HCA

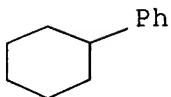
CN 1,3-Dioxol-2-one (CA INDEX NAME)



IT 827-52-1, Cyclohexylbenzene
(overcharging prevention agent; nonaq. **electrolyte**
soln. for Li secondary **battery**)

RN 827-52-1 HCA

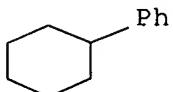
CN Benzene, cyclohexyl- (CA INDEX NAME)



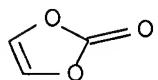
IC ICM H01M010-40
ICS H01M004-58
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST nonaq **electrolyte** soln lithium secondary **battery**
IT **Battery electrolytes**
Secondary batteries
(nonaq. **electrolyte** soln. for Li secondary
battery)
IT Sulfones
(nonaq. **electrolyte** soln. for Li secondary
battery)
IT **Electrolytes**
(nonaq.; nonaq. **electrolyte** soln. for Li secondary
battery)
IT 96-49-1, Ethylenecarbonate 105-58-8, Diethylcarbonate
(**electrolyte** soln.; nonaq. **electrolyte** soln.
for Li secondary **battery**)
IT 21324-40-3, Lithium hexafluorophosphate (LiPF₆)
(nonaq. **electrolyte** soln. for Li secondary
battery)
IT 872-36-6, Vinylenecarbonate
(nonaq. **electrolyte** soln. for Li secondary
battery)
IT 67-71-0, Dimethylsulfone 132-64-9, Dibenzofuran 827-52-1
, Cyclohexylbenzene
(overcharging prevention agent; nonaq. **electrolyte**
soln. for Li secondary **battery**)

L48 ANSWER 9 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 139:247999 HCA Full-text
TI Nonaqueous **electrolyte** from fluorine-substituted aromatic
compound and aromatic hydrocarbon and lithium secondary
battery using the same
IN Hinohara, Akio; Hayashi, Takeshi; Ishida, Tatsuyoshi; Saito, Yuki
PA Mitsui Chemicals Inc., Japan
SO Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003257479	A	20030912	JP 2002-375083	200212 25
				<--	
	CN 1430306	A	20030716	CN 2002-160047	200212 30
				<--	
PRAI	JP 2001-400435	A	20011228	<--	
OS	MARPAT 139:247999				
AB	<p>The nonaq. electrolyte comprises a F-substituted arom. compd., an arom. hydrocarbon compd. made only from C and H, a nonaq. solvent, and a Li-contg. electrolyte, wherein contents of the F-substituted arom. compd. and the arom. hydrocarbon compd. in the nonaq. electrolyte are 0.1-20 and 0.1-3 %, resp. Also claimed is the lithium secondary battery which uses above electrolyte and has a mechanism to shut-off the current as the battery temp. or the battery internal gas pressure exceed certain values, resp. The battery exhibited excellent over-charging prevention and excellent high-temp. storage stability.</p>				
IT	<p>827-52-1, Cyclohexylbenzene 872-36-6, Vinylene carbonate (nonaq. electrolyte from fluorine-substituted arom. compd. and arom. hydrocarbon for lithium secondary battery)</p>				
RN	827-52-1 HCA				
CN	Benzene, cyclohexyl- (CA INDEX NAME)				



RN 872-36-6 HCA
 CN 1,3-Dioxol-2-one (CA INDEX NAME)



IC ICM H01M010-40
ICS H01M006-16
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST nonaq **electrolyte** fluorine substituted arom compd arom
hydrocarbon; lithium secondary **battery**
IT Secondary **batteries**
(lithium; nonaq. **electrolyte** from fluorine-substituted
arom. compd. and arom. hydrocarbon for lithium secondary
battery)
IT **Battery electrolytes**
(nonaq. **electrolyte** from fluorine-substituted arom.
compd. and arom. hydrocarbon for lithium secondary
battery)
IT 92-52-4, Biphenyl, uses 101-81-5, Diphenylmethane 321-60-8,
2-Fluorobiphenyl 827-52-1, Cyclohexylbenzene
872-36-6, **Vinylene carbonate** 1120-71-4
34577-43-0 90076-65-6
(nonaq. **electrolyte** from fluorine-substituted arom.
compd. and arom. hydrocarbon for lithium secondary
battery)

L48 ANSWER 10 OF 14 HCA COPYRIGHT 2007 ACS on STN
AN 139:136057 HCA Full-text
TI Nonaqueous **electrolyte** solution and secondary lithium
battery using the solution
IN Onuki, Masamichi; Machino, Hiroshi; Isada, Katsuya
PA Mitsubishi Chemical Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF

DT Patent
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003217654	A	20030731	JP 2002-15808	200201 24

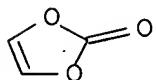
<--

PRAI JP 2002-15808 20020124 <--
AB The soln. has a Li salt dissolved in a nonaq. org. solvent mixt.;
where the solvent mixt. contains an arom. hydrocarbon or an arom.
ether, and a bis- org. sulfonate compd. of the formula R1SO3XO3SR2 (X
= a C2-4 alkylene group; R1 and R2 = a hydrocarbon group).
IT 872-36-6, **Vinylene carbonate**
(**electrolyte** solns. contg. arom. ethers or hydrocarbons

and bis-org. sulfonate compd. for secondary lithium
batteries)

RN 872-36-6 HCA

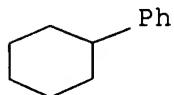
CN 1,3-Dioxol-2-one (CA INDEX NAME)



IT 827-52-1, Cyclohexyl benzene
(**electrolyte** solns. contg. arom. ethers or hydrocarbons
and bis-org. sulfonate compd. for secondary lithium
batteries)

RN 827-52-1 HCA

CN Benzene, cyclohexyl- (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium secondary **battery** nonaq **electrolyte**
solvent org sulfonate compd; **battery electrolyte**
solvent arom ether hydrocarbon

IT **Battery electrolytes**

(**electrolyte** solns. contg. arom. ethers or hydrocarbons
and bis-org. sulfonate compd. for secondary lithium
batteries)

IT 96-49-1, Ethylene carbonate 616-38-6, Dimethyl carbonate
623-53-0, Ethyl methyl carbonate 872-36-6,

Vinyleno carbonate 21324-40-3, Lithium
hexafluorophosphate

(**electrolyte** solns. contg. arom. ethers or hydrocarbons
and bis-org. sulfonate compd. for secondary lithium
batteries)

IT 55-98-1, 1,4-Butanediol dimethanesulfonate 827-52-1,

Cyclohexyl benzene

(**electrolyte** solns. contg. arom. ethers or hydrocarbons
and bis-org. sulfonate compd. for secondary lithium
batteries)

L48 ANSWER 11 OF 14 HCA COPYRIGHT 2007 ACS on STN

AN 139:55539 HCA Full-text

TI Nonaqueous **electrolyte** solution and secondary lithium **battery** using the solution

IN Onuki, Masamichi; Machino, Hiroshi; Susuda, Hiroshi

PA Mitsubishi Chemical Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----

PI JP 2003187861 A 20030704 JP 2001-387746

200112
20

<--

PRAI JP 2001-387746 20011220 <--

AB The **electrolyte** soln. has a Li salt dissolved in an org. solvent mixt.; where the solvent mixt. contains a thiuram sulfide compd.

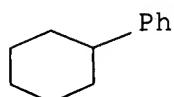
IT 827-52-1, Cyclohexyl benzene 872-36-6,

Vinylene carbonate

(org. solvent mixts. contg. thiuram sulfide compds. in Li salt **electrolyte** solns. for secondary lithium **batteries**)

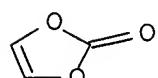
RN 827-52-1 HCA

CN Benzene, cyclohexyl- (CA INDEX NAME)



RN 872-36-6 HCA

CN 1,3-Dioxol-2-one (CA INDEX NAME)



IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary **battery electrolyte** org solvent
thiuram sulfide compd
IT Secondary **batteries**
(lithium; org. solvent mixts. contg. thiuram sulfide compds. in
Li salt **electrolyte** solns. for secondary lithium
batteries)
IT **Battery electrolytes**
(org. solvent mixts. contg. thiuram sulfide compds. in Li salt
electrolyte solns. for secondary lithium
batteries)
IT 96-49-1, Ethylene carbonate 616-38-6, Dimethyl carbonate
623-53-0, Ethyl methyl carbonate 827-52-1, Cyclohexyl
benzene 872-36-6, **Vinylene carbonate**
21324-40-3, Lithium hexafluorophosphate
(org. solvent mixts. contg. thiuram sulfide compds. in Li salt
electrolyte solns. for secondary lithium
batteries)
IT 92-06-8, m-Terphenyl 97-74-5, Tetramethyl thiuram monosulfide
137-26-8, Tetramethyl thiuram disulfide
(org. solvent mixts. contg. thiuram sulfide compds. in Li salt
electrolyte solns. for secondary lithium
batteries)

L48 ANSWER 12 OF 14 HCA COPYRIGHT 2007 ACS on STN

AN 138:173348 HCA Full-text

TI Nonaqueous **electrolyte** solution and secondary
battery using the solution

IN Shima, Kunihisa; Shizuka, Kenji; Ue, Makoto

PA Mitsubishi Chemical Corporation, Japan

SO PCT Int. Appl., 41 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	-----	-----	-----	-----	-----
PI	WO 2003012912	A1	20030213	WO 2002-JP7392	200207 22

<--

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO,

NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,
 TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE,
 BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU,
 MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
 GW, ML, MR, NE, SN, TD, TG

JP 2003100344	A	20030404	JP 2001-289868	200109 21
JP 3973389	B2	20070912		
JP 2003100345	A	20030404	JP 2001-289869	200109 21
JP 2003100346	A	20030404	JP 2001-289870	200109 21
AU 2002318761	A1	20030217	AU 2002-318761	200207 22
EP 1414099	A1	20040428	EP 2002-747709	200207 22
<--				
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
JP 2003115325	A	20030418	JP 2002-217624	200207 26
US 2003180626	A1	20030925	US 2003-397320	200303 27
<--				

US 7144660	B2	20061205	
PRAI JP 2001-227476	A	20010727	<--
JP 2001-289868	A	20010921	<--
JP 2001-289869	A	20010921	<--
JP 2001-289870	A	20010921	<--
WO 2002-JP7392	W	20020722	<--

AB The **battery** has a Li-intercalating anode, a cathode, and a nonaq. **electrolyte** soln., contg. a Li salt dissolved in an org. solvent; where the soln. contains a partially-hydrolyzed terphenyl, having a di-Ph cyclohexane 10-60% and a cyclohexylbiphenyl 3-35 %; and the soly. of the terphenyl in the **electrolytic** soln. at room temp. is ≥ 0.5 wt. %. Preferably, the content of diphenylcyclohexane and cyclohexylbiphenyl is 0.01-6.5% and 0.003-3.5 % of the soln. The

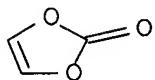
battery using the above **electrolyte** soln. has improved safety when it is overcharged, and good performance.

IT 872-36-6, **Vinylene carbonate**

(Li salt **electrolyte** solns contg. partially-hydrolyzed terphenyls for. secondary lithium **batteries**)

RN 872-36-6 HCA

CN 1,3-Dioxol-2-one (CA INDEX NAME)

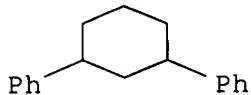


IT 1667-08-9 1973-15-5

(Li salt **electrolyte** solns contg. partially-hydrolyzed terphenyls for. secondary lithium **batteries**)

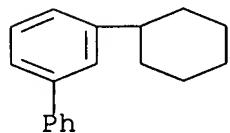
RN 1667-08-9 HCA

CN Benzene, 1,1'-(1,3-cyclohexanediyl)bis- (9CI) (CA INDEX NAME)



RN 1973-15-5 HCA

CN 1,1'-Biphenyl, 3-cyclohexyl- (CA INDEX NAME)



IC ICM H01M010-40

ICS H01M004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary **battery electrolyte** terphenyl

diphenylcyclohexane cyclohexykbiphenyl safety

IT **Battery electrolytes**

(Li salt **electrolyte** solns contg. partially-hydrolyzed terphenyls for. secondary lithium **batteries**)

IT 96-49-1, Ethylene carbonate 623-53-0, Ethylmethylcarbonate

872-36-6, Vinylene carbonate 1120-71-4
 21324-40-3, Lithium hexafluorophosphate
 (Li salt **electrolyte** solns contg. partially-hydrolyzed
 terphenyls for. secondary lithium **batteries**)
 IT 84-15-1, o-Terphenyl 92-06-8D, m-Terphenyl, partially-hydrolyzed
1667-08-9 1973-15-5
 (Li salt **electrolyte** solns contg. partially-hydrolyzed
 terphenyls for. secondary lithium **batteries**)
 RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 13 OF 14 HCA COPYRIGHT 2007 ACS on STN
 AN 137:188305 HCA Full-text
 TI Nonaqueous secondary **battery** having enhanced discharge
 capacity retention
 IN Hamamoto, Toshikazu; Abe, Koji; Takai, Tsutomu; Matsumori, Yasuo;
 Ueki, Akira
 PA Ube Industries, Ltd., Japan
 SO U.S. Pat. Appl. Publ., 13 pp., Cont.-in-part of U.S. Ser. No.
 631,518.
 CODEN: USXXCO

DT Patent
 LA English

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002122988	A1	20020905	US 2001-21130	200110 22
				<--	
	US 6866966	B2	20050315		
	JP 2001052735	A	20010223	JP 1999-219708	199908 03
				<--	
	JP 3444243	B2	20030908		
	JP 2002134167	A	20020510	JP 2000-321146	200010 20
				<--	
	JP 2002203594	A	20020719	JP 2000-363656	200011 29
				<--	
PRAI	JP 1999-219708	A	19990803	<--	
	US 2000-631518	A2	20000803	<--	

JP 2000-321146 A 20001020 <--
JP 2000-335946 A 20001102 <--
JP 2000-363656 A 20001129 <--

OS MARPAT 137:188305

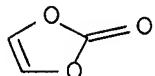
AB The discharge capacity retention of a nonaq. secondary **battery** is enhanced by incorporating into its nonaq. **electrolytic** soln. a small amt. of a substituted diphenyldisulfide deriv. in which each of the di-Ph groups has a substituent such as alkoxy, alkenyloxy, alkynyoxy, cycloalkyloxy, aryloxy, acyloxy, alkanesulfonyloxy, arylsulfonyloxy, alkoxy carbonyloxy, aryloxycarbonyloxy, halogen, CF₃, CCl₃, or CBr₃. Preferably, a small amt. of Me-2-propylcarbonate, 2-propynyl methanesulfonate, 1,3-propanesultone, divinylsulfone, 1,4-butanediol dimethanesulfonate or cyclohexylbenzene is further incorporated.

IT 872-36-6, **Vinylene carbonate**

(nonaq. secondary **battery** having enhanced discharge capacity retention)

RN 872-36-6 HCA

CN 1,3-Dioxol-2-one (CA INDEX NAME)

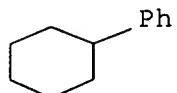


IT 827-52-1, **Cyclohexylbenzene**

(nonaq. secondary **battery** having enhanced discharge capacity retention)

RN 827-52-1 HCA

CN Benzene, cyclohexyl- (CA INDEX NAME)



IC ICM H01M010-40

INCL 429340000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST **battery electrolyte** additive substituted diphenyldisulfide deriv

IT **Secondary batteries**

(lithium; nonaq. secondary **battery** having enhanced

discharge capacity retention)

IT **Battery electrolytes**

(nonaq. secondary **battery** having enhanced discharge capacity retention)

IT 68-12-2, Dmf, uses 75-05-8, Acetonitrile, uses 96-47-9, 2-Methyltetrahydrofuran 96-48-0, γ -Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 109-99-9, Tetrahydrofuran, uses 110-71-4, 1,2-Dimethoxyethane 112-48-1, 1,2-Dibutoxyethane 123-91-1, 1,4-Dioxane, uses 539-92-4, Diisobutyl carbonate 554-12-1, Methyl propionate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 629-14-1, 1,2-Diethoxyethane 872-36-6, **Vinylene carbonate** 4437-85-8, Butylene carbonate 6482-34-4, Diisopropyl carbonate 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 85213-04-3, Carbonic acid, methyl 2-methylpropyl ester 90076-65-6 132404-42-3 132843-44-8 205926-54-1 205926-56-3 365454-70-2 365460-35-1 403699-22-9 (nonaq. secondary **battery** having enhanced discharge capacity retention)

IT 51729-83-0, Isopropyl methyl carbonate

(nonaq. secondary **battery** having enhanced discharge capacity retention)

IT 55-98-1, 1,4-Butanediol dimethanesulfonate 77-77-0, Divinylsulfone 405-31-2, Bis(4-fluorophenyl)disulfide 827-52-1, Cyclohexylbenzene 1120-71-4, 1,3-Propanesultone 1142-19-4, Bis(4-chlorophenyl)disulfide 5335-87-5, Bis(4-methoxyphenyl)disulfide 12057-17-9, Lithium manganese oxide limn2o4 16156-58-4, 2-Propynyl methanesulfonate 18715-45-2 31121-13-8, Bis(4-ethoxyphenyl)disulfide 61764-71-4, Methyl 2-propynyl carbonate 107014-69-7 113066-89-0, Cobalt lithium nickel oxide Co0.2LiNi0.8O2 326921-47-5 326921-48-6 (nonaq. secondary **battery** having enhanced discharge capacity retention)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 14 OF 14 HCA COPYRIGHT 2007 ACS on STN

AN 136:328190 HCA Full-text

TI Nonaqueous secondary **battery** having enhanced discharge capacity retention

IN Abe, Koji; Ueki, Akira; Hamamoto, Toshikazu

PA Ube Industries, Ltd., Japan

SO Eur. Pat. Appl., 15 pp.

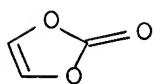
CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1199766	A2	20020424	EP 2001-124312	200110 19
				<--	
	EP 1199766	A3	20040602		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2002134167	A	20020510	JP 2000-321146	200010 20
				<--	
	JP 2002203594	A	20020719	JP 2000-363656	200011 29
				<--	
	CN 1350343	A	20020522	CN 2001-142417	200110 19
				<--	
	HK 1044414	A1	20060428	HK 2002-105983	200208 15
				<--	
PRAI	JP 2000-321146	A	20001020	<--	
	JP 2000-335946	A	20001102	<--	
	JP 2000-363656	A	20001129	<--	
OS	MARPAT 136:328190				
AB	A discharge capacity retention of a nonaq. secondary battery is enhanced by incorporating into its nonaq. electrolytic soln. a small amt. of a substituted diphenyldisulfide deriv. in which each of the di-Ph groups has a substituent such as alkoxy, alkenyloxy, alkynyloxy, cycloalkyloxy, aryloxy, acyloxy, alkanesulfonyloxy, arylsulfonyloxy, alkoxycarbonyloxy, aryloxycarbonyloxy, halogen, CF ₃ , CC ₁ 3, or CBr ₃ . Preferably, a small amt. of Me 2-propylcarbonate, 2-propynyl methanesulfonate, 1,3-propanesultone, divinylsulfone, 1,4-butanediol dimethanesulfonate or cyclohexylbenzene is further incorporated.				
IT	872-36-6, Vinylene carbonate (nonaq. secondary battery having enhanced discharge capacity retention)				
RN	872-36-6 HCA				
CN	1,3-Dioxol-2-one (CA INDEX NAME)				

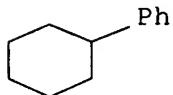


IT 827-52-1, Cyclohexylbenzene

(nonaq. secondary **battery** having enhanced discharge capacity retention)

RN 827-52-1 HCA

CN Benzene, cyclohexyl- (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST **battery** secondary nonaq **electrolyte**

IT **Battery electrolytes**

Secondary **batteries**

(nonaq. secondary **battery** having enhanced discharge capacity retention)

IT 68-12-2, Dmf, uses 75-05-8, Acetonitrile, uses 96-47-9,

2-Methyltetrahydrofuran 96-48-0, γ -Butyrolactone 96-49-1,

Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7,

Propylene carbonate 109-99-9, Thf, uses 110-71-4,

1,2-Dimethoxyethane 112-48-1, 1,2-Dibutoxyethane 123-91-1,

1,4-Dioxane, uses 539-92-4, Diisobutyl carbonate 554-12-1,

Methyl propionate 616-38-6, Dimethyl carbonate 623-53-0, Methyl

ethyl carbonate 629-14-1, 1,2-Diethoxyethane 872-36-6,

Vinylene carbonate 4437-85-8, Butylene carbonate

6482-34-4, Diisopropyl carbonate 7782-42-5, Graphite, uses

7791-03-9, Lithium perchlorate 12190-79-3, Cobalt lithium oxide

colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium

hexafluorophosphate 85213-04-3, Carbonic acid, methyl

(2-methylpropyl) ester 90076-65-6 113066-89-0, Cobalt lithium

nickel oxide Co0.2LiNi0.8O2 132404-42-3 132843-44-8

205926-54-1 205926-56-3 365454-70-2 365460-35-1 403699-22-9

(nonaq. secondary **battery** having enhanced discharge capacity retention)

IT 55-98-1, 1,4-Butanediol dimethanesulfonate 77-77-0, Divinylsulfone

827-52-1, Cyclohexylbenzene 882-33-7D, Diphenyldisulfide,
substituted deriv. 1120-71-4, 1,3-Propanesultone 1142-19-4,
Bis(4-chlorophenyl)disulfide 5335-87-5, Bis(4-
methoxyphenyl)disulfide 13153-11-2, 1,3-Propanesulfone
16156-58-4, 2-Propynyl methanesulfonate 31121-13-8,
Bis(4-ethoxyphenyl)disulfide 51729-83-0, Methyl isopropyl
carbonate 61764-71-4, Methyl 2-propynylcarbonate 64923-50-8,
1,3-Butanediol dimethanesulfonate
(nonaq. secondary **battery** having enhanced discharge
capacity retention)